UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,932	10/09/2003	Abderrahim Abdelhadi	SMBZ 2 01012	7748

27885 7590 02/07/2006

FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OH 44114

EXAMINER	
YACOB, SISAY	

ART UNIT	PAPER NUMBER
2635	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

H.A

Office Action Summary	Application No. 10/681,932	Applicant(s) ABDELHADI, ABDERRAHIM	
	Examiner Sisay Yacob	Art Unit 2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1 The application of Abdelhadi "Identically programmed intelligent electrodes for use in geoelectrical surveys" filed on October 9, 2003 has been examined.

Claims 1- 13 are pending

Claim Rejections - 35 USC § 102

2 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3 Claims 1-2, and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent of Griffiths et al., (4,752,881).

4 As to claim 1, Griffiths et al., discloses an apparatus for conducting geophysical surveys (Col. 1, lines 46-47) comprising at least one multi-conductor cable (Col. 1, lines 49-50) having a plurality of take-out locations (Col. 1, lines 48-49), a controller for transmitting a coded command signal having a first portion that is modifiable to identify a specific take-out location (Col. 1, lines 47-51) and a second portion for identifying a

specific conductor of said cable to be connected to ground (Col. 1, lines 57-61), and a plurality of interchangeable addressable switches for connection in series to the cable at selected ones of said take-out locations(Col. 2, lines 1-4), each of the switches being operable to receive and modify the first portion of the command signal (Col. 4, lines 4-10) and to transmit the command signal so modified to an adjacent one of said switches (Col. 4, lines 10-14, 30-31), such that successive ones of said switches modify said first portion of the command signal until the first portion has been modified to identify the specific take-out location (Col. 3, lines 64-68; Col. 4, lines 1-3), whereupon a specific switch connected to the cable at the specific take-out location connects the specific conductor to ground in accordance with the second portion of the coded command signal (Items S8, S10 and S11 of figure 3).

5 As to claim 2, the apparatus of claim 1, further, Griffiths et al., discloses a generator for generating an electrical current on one conductor pair of the cable (Col. 1, lines 21-24).

6 As to claim 8, a method of conducting geophysical surveys along a multi-conductor cable having a plurality of take-out locations (Col. 1, lines 46-47; Col. 1, lines 49-50; Col. 1, lines 48-49) comprising transmitting from a controller a coded command signal having a first portion that is modifiable to identify a specific take-out location (Col. 1, lines 47-51) and a second portion for identifying a specific conductor of said cable to be connected to ground (Col. 1, lines 57-61) connecting a plurality of interchangeable

addressable switches in series to said cable at selected ones of said take-out locations (Col. 2, lines 1-4; See figure 2), and within respective ones of the switches receiving and modifying the first portion of said command signal and transmitting the command signal so modified to an adjacent one of said switches (Col. 4, lines 49-54; See figures 4 and 5), such that successive ones of said switches modify said first portion of the command signal until said first portion has been modified to identify said specific take-out location (Col. 3, lines 64-68; Col. 4, lines 1-3), whereupon a specific switch connected to the cable at said specific take-out location connects said specific conductor to ground in accordance with said second portion of the coded command signal (Items S8, S10 and S11 of figure 3).

7 As to claim 9, the method of claim 8, further, Griffiths et al., disclose generating an electrical current on one conductor pair of said cable (Col. 1, lines 21-24).

Rejections - 35 USC § 103

8 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9 Claims 3-5, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths et al.

10 As to claims 3 and 10, the apparatus and method of claims 1 and 8, however, Griffiths et al., does not expressly disclose measuring voltage across one conductor pair of the cable. However, Griffiths et al., discloses measuring resistance across conductor pairs (Col. 1, lines 45-61). Therefore, one skilled in the art recognizes measuring voltage and resistance are inversely related and one property may be figured out if the other is known. Also, voltage, current, or resistance measuring devices are conventional in the meter reading art and to substitute one for the other would have been obvious depending on what property is desired by the practitioners in the art.

11 As to claims 4 and 11, the apparatus and the method of claims 1 and 8, further, Griffiths et al., discloses the first portion of the coded command signal is a numeric corresponding in number to said specific switch in the series along the cable measured from the location of the controller (Col. 4, lines 49-54; See figures 4 and 5), however,

Griffiths et al., does not expressly discloses the first portion of the command signal is modified to reduce the numeric by a predetermined amount at each successive one of the switches until the command signal is received by the specific switch whereupon the specific switch connects the specific conductor to ground in accordance with the second portion of the coded command signal. However, Griffiths et al., discloses a portion of the command signal is modified to increment the numeric by a predetermined amount (Col. 4, lines 7-10, 30-35), at each successive one of the switches until the command signal is received by the specific switch whereupon the specific switch connects the specific conductor to ground in accordance with a portion of the coded command signal (Col. 1, lines 49-61; Col. 4, lines 11-14).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the portion of the command signal that is modified to increase the numeric by a predetermined amount at each successive one of the switches until the command signal is received by the specific switch of Griffiths et al., in order to have the first portion of the command signal is modified to reduce the numeric by a predetermined amount at each successive one of the switches until the command signal is received by the specific switch whereupon the specific switch connects the specific conductor to ground in accordance with the second portion of the coded command signal, because one of ordinary skill in the art recognizes having the command signal is modified to decrement or increment the numeric by a predetermined amount at each successive one of the switches until the command signal is received by the specific switch would achieve the same end result and to decrement or increment the numeric by a predetermined amount is a mater of design preference.

12 As to claim 5, the apparatus of claim 4, further, Griffiths et al., discloses the predetermined amount is one (Item S10 of figure 3).

13 As to claim 12, the method of claim 11, further, Griffiths et al., discloses the predetermined amount is one (Item S10 of figure 3).

14 Claims 6, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths et al., in view of US patent of Wyant et al., (6,907,363)

15 As to claims 6 and 13, the apparatus and method of claims 1 and 8, however, Griffiths et al., does not expressly disclose controlling the direction of transmission of the coded command signal along the cable, such that the controller may selected for operation at either end of the cable. In similar field of endeavor, Wyant et al., discloses conductor- to-conductor and two conductor-to-ground paths that incorporate a complementary switching configuration for multi-conductor cable (Col. 6, lines 53-67; See figures 6A and B).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the apparatus and method the coded command signal of Griffiths et al., by incorporating complementary switching configuration for multi-conductor of

Wyant et al., in order to have the controlling the direction of transmission of the coded command signal along the cable, such that the controller may selected for operation at either end of the cable, because Griffiths et al., disclose a bi-directional multi-conductors geophysical test mechanism with a coded control command and Wyant et al., discloses a complementary switching configuration for multi-conductors. One of ordinary skill in the art recognizes having the command signal modified to control the direction of transmission of the coded command signal along the cable, such that the controller may select for operation at either end of the cable may provide redundancy for signal transmission reliability.

16 As to claim 7, the apparatus of claim 6, further, Wyant et al., discloses the gate circuitry includes a pair of unidirectional gates connected in parallel with opposite polarity between respective ones of the switches for transmitting the command signal therebetween, and control logic connected to a further conductor of the cable and to each respective one of the gates for enabling only one of the gates in each pair, such that the command signal is transmitted between the switches in only one direction along the cable (See figures 6A and B).

Conclusion

17 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following cited arts are further to show the sate of art related to Identically programmed intelligent electrodes for use in geo-electrical surveys.

In the US publication (20040222805) Tillmann et al., discloses an apparatus and a method for the simultaneous application of electrical signals and measurement of the electrical potential in a sample.

In the US patent (3,851,302) Schmitt discloses a method and apparatus for seismic data acquisition by sequential sampling of data.

In the US patent (6,943,553) Zimmermann et al., discloses a method and apparatus for rapid tomographic measurements of the electrical conductivity distribution of a sample.

18 inquiry concerning this communication or earlier communications from the examiner should be directed to Sisay Yacob whose telephone number is (571) 272-8562. The examiner can normally be reached on Monday through Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sisay Yacob

01/27/2006

S.Y.

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Michael Horabik